WHAT IS CLAIMED IS:

1. A method for activating a *trk* receptor comprising exposing cells having the *trk* receptor to a multivalent immunoglobulin which binds to the receptor and activates the receptor.

2. A method of claim 1 wherein the *trk* receptor is selected from the group consisting of *trk*A, *trk*B, and *trk*C.

3. A method of claim 1 wherein the immunoglobulin induces at least one member of the group consisting of an increase in phosphorylation of the receptor, an increase in phosphorylation of a protein substrate that is phosphorylated in response to activation of the receptor, and promotion of an effector function of receptor activation.

4. A method of claim 3 wherein the effector function is a member of the group consisting of promotion of neuronal survival, promotion of neuronal differentiation, and improved neuronal function.

5. A method of claim 1 wherein the immunoglobulin is bivalent.

6. A method of claim 1 wherein the immunoglobulin is a monoclonal antibody.

7. A method of therapy for a neurologic disorder associated with suboptimal activity of a *trk* receptor, said method comprising administering to a mammal having the disorder a therapeutically effective amount of a multivalent immunoglobulin which activates the receptor.

8. A method of claim 7 wherein the *trk* receptor is selected from the group consisting of *trk*A, *trk*B, and *trk*C.

9. A method of claim 7 wherein the immunoglobulin induces an increase in phosphorylation of the receptor thereby activating the receptor.

10. A method of claim 7 further comprising the step of administering at least one of an additive and a diluent simultaneously with the immunoglobulin.

11. A method of claim 7 wherein the effective amount is from about 0.1 μg to about 1 mg per kg body weight of the mammal.

12. A method of claim 7 wherein the administration is selected from the group consisting of intravenous, intramuscular, intraventricular, and parenteral pump implant administration.

13. A method of claim 7 wherein the immunoglobulin is a bivalent monoclonal antibody.

14. A method of claim 7 wherein the disorder is selected from the group consisting of Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, peripheral neuropathy, nervous system cancer, cerebral ischemia, nerve tissue ischemia and epilepsy.

15. A method of claim 14 wherein the nervous system cancer is selected from the group consisting of primitive neuroectodermal tumors, neuroblastomas, medulloblastomas, ganglioneuromas, Ewing's sarcoma, gliomas, glioblastomas and astrocytomas.

16. A method for diagnosing a neurologic disorder associated by suboptimal activity of a *trk* receptor, said method comprising:

(a) obtaining a nerve cellular sample;

(b) exposing the sample to a bivalent immunoglobulin which (1) binds to the receptor and (2) induces an increase in the phosphorylation of the receptor; and

(c) assaying the sample for (1) binding to the bivalent immunoglobulin and (2) increased phosphorylation.

17. A method of claim 16 wherein the nerve cellular sample is from the peripheral nervous system.

18. A method for determining whether cellular material has a *trk* receptor comprising:

(a) exposing the cellular material to a bivalent immunoglobulin which (1) binds to the receptor and (2) induces an increase in phosphorylation of the receptor; and

(b) assaying the cellular material for (1) binding to the bivalent immunoglobulin and (2) increased phosphorylation.

19. A multivalent immunoglobulin which binds to a *trk* receptor and functions as an agonist to the receptor.

20. An immunoglobulin of claim 19 wherein the receptor is selected from the group consisting of *trk*A, *trk*B, and *trk*C.

21. A monovalent immunoglobulin which binds to a *trk* receptor and blocks activation of the receptor.

22. A method for blocking activation of a *trk* receptor comprising subjecting the receptor to a monovalent immunoglobulin that binds the receptor.